



# Australian Bureau of Statistics

## 1301.0 - Year Book Australia, 2000

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 25/01/2000

### CLIMATE AND THE SYDNEY 2000 OLYMPIC GAMES

The Olympic Games are the largest sporting event in the world. During the Sydney 2000 Olympic Games, more than 15,000 athletes and team officials are expected to be involved in 28 sports; during the Sydney Paralympic Games, some 7,000 athletes and team officials will be involved in 18 sports.

Local climate factors such as heat, humidity and wind are important considerations in preparing for and organising the Olympic Games. Information about the local climate and thermal comfort is important for athletes to attain peak performance. Athletes have the ability to precondition themselves to varying climates by training in climatic conditions similar to those in which they will compete. Chill and Heat Indexes are also used as tools by coaches, as indicators of the effect on playing conditions of the climate elements. In Sydney, both indices are likely to remain in the comfort zone during September and October.

The extensive records held by the Bureau of Meteorology archives have been analysed for the period 1 September to 31 October 2000 (see table S2.1). This covers the time from when the competitors arrive at the Olympic Village, through the Olympic Games themselves (15 September to 1 October), until the conclusion of the Paralympic Games (18 - 29 October).

### S2.1 CLIMATE ALMANAC FOR SYDNEY

Day	Maximum temperatures (°C)		Minimum temperatures (°C)		Frequency of rain (%)				
	Mean	Highest	Year	Mean	Lowest	Year	All rain	>=2mm	>=10mm
SEPTEMBER									
1	18.4	27.5	1865	9.7	5.1	1864	29	14	4
2	18.9	28.2	1865	9.6	4.9	1945	36	9	14
3	18.9	29.1	1865	9.9	5.6	1869	34	16	7
4	19.1	28.9	1915	10.0	5.1	1875	32	15	7
5	18.8	28.3	1962	10.2	5.1	1875	35	15	5
6	19.3	27.9	1953	10.0	5.2	1995	36	19	4
7	19.4	28.9	1953	10.4	5.0	1905	33	18	6
8	19.4	31.3	1953	10.1	5.2	1919	32	16	5
9	19.5	29.6	1981	10.5	5.5	1869	36	16	4
10	19.3	28.3	1989	10.6	5.6	1947	38	19	7
11	19.4	29.9	1946	10.8	6.1	1927	41	23	10
12	19.8	31.7	1946	10.6	5.6	1939	43	20	7
13	19.4	30.7	1946	10.9	6.0	1884	33	14	5
14	19.4	30.7	1901	10.9	5.8	1933	39	16	7
15	19.7	29.3	1942	10.8	5.6	1908	39	21	7
16	19.6	29.9	1996	10.7	6.0	1927	36	22	7
17	19.8	31.4	1928	10.9	5.8	1908	39	20	6
18	20.1	30.3	1951	10.9	6.1	1944	31	13	5
19	20.2	31.2	1919	11.2	5.0	1859	32	16	4
20	20.5	30.9	1931	11.2	6.2	1860	39	23	9

21	20.4	31.8	1907	11.5	5.9	1861	32	16	6
22	20.8	32.1	1898	11.9	6.6	1994	40	27	6
23	20.3	31.3	1907	11.5	6.2	1874	34	19	7
24	20.2	32.8	1907	11.5	6.5	1946	35	23	9
25	19.8	34.2	1980	11.5	6.1	1870	41	21	5
26	20.0	34.6	1965	11.5	6.2	1927	37	19	7
27	20.3	33.5	1919	11.8	6.7	1920	45	25	6
28	20.5	32.6	1987	12.0	6.4	1905	36	24	12
29	20.8	31.5	1937	11.9	6.3	1904	35	21	7
30	20.7	32.9	1973	12.1	5.6	1904	41	21	9

## OCTOBER

1	<b>20.8</b>	<b>33.1</b>	<b>1961</b>	<b>12.2</b>	<b>6.6</b>	<b>1904</b>	<b>38</b>	<b>19</b>	<b>4</b>
2	20.9	34.3	1981	12.3	6.2	1918	38	19	7
3	20.9	33.4	1977	12.3	5.7	1918	35	19	7
4	21.3	37.4	1942	12.6	6.5	1918	35	19	10
5	20.8	33.2	1970	12.6	7.6	1927	45	24	8
6	20.9	32.6	1991	12.5	5.7	1927	40	21	6
7	22.1	36.7	1827	13.0	7.9	1915	34	17	3
8	22.0	35.9	1936	13.2	7.7	1966	31	14	4
9	22.0	35.2	1944	13.3	6.7	1905	33	16	7
10	22.0	35.6	1944	13.3	7.2	1917	39	20	7
11	21.7	35.0	1997	13.2	8.1	1993	36	23	1
12	21.7	35.6	1874	13.0	7.8	1862	42	22	7
13	21.6	35.7	1946	13.1	7.3	1876	36	23	6
14	21.8	35.6	1944	13.4	7.3	1865	41	21	7
15	21.9	35.3	1940	13.5	8.3	1866	38	18	7
16	21.8	34.5	1991	13.5	8.1	1946	41	19	4
17	22.1	34.8	1968	13.4	8.3	1946	33	21	10
18	<b>21.9</b>	<b>34.6</b>	<b>1887</b>	<b>13.4</b>	<b>8.1</b>	<b>1944</b>	<b>36</b>	<b>20</b>	<b>9</b>
19	<b>21.7</b>	<b>37.2</b>	<b>1898</b>	<b>13.6</b>	<b>8.8</b>	<b>1891</b>	<b>42</b>	<b>22</b>	<b>7</b>
20	<b>22.3</b>	<b>36.3</b>	<b>1900</b>	<b>13.9</b>	<b>8.3</b>	<b>1944</b>	<b>43</b>	<b>20</b>	<b>5</b>
21	<b>21.8</b>	<b>32.8</b>	<b>1913</b>	<b>13.7</b>	<b>8.4</b>	<b>1908</b>	<b>38</b>	<b>24</b>	<b>11</b>
22	<b>22.4</b>	<b>34.8</b>	<b>1923</b>	<b>13.8</b>	<b>7.2</b>	<b>1942</b>	<b>39</b>	<b>23</b>	<b>8</b>
23	<b>22.0</b>	<b>36.2</b>	<b>1926</b>	<b>14.0</b>	<b>7.2</b>	<b>1881</b>	<b>39</b>	<b>19</b>	<b>6</b>
24	<b>22.2</b>	<b>36.7</b>	<b>1867</b>	<b>14.0</b>	<b>8.9</b>	<b>1947</b>	<b>40</b>	<b>19</b>	<b>7</b>
25	<b>21.6</b>	<b>34.4</b>	<b>1910</b>	<b>13.9</b>	<b>7.8</b>	<b>1931</b>	<b>43</b>	<b>24</b>	<b>6</b>
26	<b>22.6</b>	<b>36.2</b>	<b>1948</b>	<b>13.9</b>	<b>8.9</b>	<b>1946</b>	<b>35</b>	<b>19</b>	<b>7</b>
27	<b>23.0</b>	<b>35.3</b>	<b>1935</b>	<b>14.3</b>	<b>7.7</b>	<b>1899</b>	<b>39</b>	<b>21</b>	<b>8</b>
28	<b>22.6</b>	<b>33.8</b>	<b>1968</b>	<b>14.3</b>	<b>7.8</b>	<b>1864</b>	<b>33</b>	<b>17</b>	<b>6</b>
29	<b>22.8</b>	<b>36.8</b>	<b>1988</b>	<b>14.4</b>	<b>8.8</b>	<b>1864</b>	<b>37</b>	<b>24</b>	<b>9</b>
30	23.2	35.7	1958	14.7	8.9	1864	35	17	4
31	23.1	35.0	1927	14.8	9.2	1962	41	21	5

Source: National Climate Centre, Bureau of Meteorology.

All outdoor sports can be affected by extreme weather events. These include:

- thunderstorms with associated lightning, winds and hail;
- heavy rain that obscures targets, inhibits viewing or covers the playing surface; and
- heavy fog.

These conditions can stop play as they endanger both competitors and spectators. The Bureau of Meteorology will be providing regular and extensive weather forecasts and special bulletins during September and October 2000. This will ensure that both athletes and spectators receive adequate warnings of these extreme weather events.

Other weather conditions can affect individual sports:

- rowing is affected if the wind conditions give an unfair advantage to one or more lanes, or create waves that make the course unusable for rowing;
- sailing events are affected by wind, and therefore will only take place if the wind speed is between 5 and 25 knots (9.2 to 46.3 km/h);
- tennis can be halted by persistent or heavy rain; and
- athletics will be delayed if rain makes the surface hazardous, or makes events such as the pole vault dangerous.

In addition, in international competition, if the wind velocity (measured in the direction of running behind the competitor) averages more than 2 metres per second, a record will not be accepted.

The major influences on Sydney's climate are the topography in and around the Sydney area, the sea-surface temperature of the coastal waters, and the orientation of the coastline.

The Sydney region is bowl shaped, with the low flood plain of the Nepean - Hawkesbury River forming the central part of the bowl about 50 km from the coast. Sydney Olympic Park, at Homebush Bay, is 28 metres above mean sea level, and the highest venue is the Equestrian Centre at Horsley Park which is 100 metres above sea level.

Despite the relatively low height of the mountains (the Great Dividing Range) to the west, they have a profound effect on the rainfall of the Sydney region. South-westerly winds must pass over the mountain range before reaching the coast and will often lose their moisture on the southern and western slopes. However, a flow from the south or east finds the coast and the ranges a significant barrier. Therefore the heaviest rains in the Sydney region tend to come from these airstreams.

The major local current off the New South Wales coast is the East Australian current which brings warm water from the Coral Sea into the cooler Tasman Sea, keeping the sea surface temperatures off Sydney relatively warm.

The nearby Tasman Sea and the extensive inlets and waterways of the Sydney region also help to modify the coastal climate. As a result, Sydney has a temperate climate with warm, sometimes hot summers, cool winters and mainly reliable rainfall all year.

Sydney's climate is generally cool to mild in September and mild in October. September and October are the first months of spring, with mild to warm temperatures during the day and cool to mild nights - although the occasional hot day and cold night do occur. Humidity is moderate, both during the morning and afternoon. Only a few fogs develop in Sydney's west and these dissipate early. Thunderstorms are generally few, increasing in frequency in late spring.

September and October are among Sydney's windiest months, with an average of three and four days respectively per month experiencing winds of more than 40 km/h (22 knots). Such strong winds favour southerly to westerly directions. During October strong winds are more prevalent from the south and sea-breezes become more common.

In the Sydney region, Ultraviolet Radiation (UV) is at its most intense from late morning to mid-afternoon; the average maximum 'clear sky' UV Index value occurs in the early afternoon.

Windy days and mild temperatures characterise a typical spring day in Sydney, making it generally a season of good overall air quality and, compared to some previous Olympic cities, the climate for Sydney can be expected to be mild.

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This page last updated 24 September 2007

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